IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

In re Patent Application of

WALKER, et al.

Serial No. 10/501,771

Filed: July 20, 2004

Title: VIDEO CODING

Atty Dkt. LSN-36-1832
C# M#
Confirmation No. 7138
TC/A.U.: 2621
Examiner: Chikoadili E. Anyikire
Date: October 22, 2008

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**

☐ **NOTICE OF APPEAL**
Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the last decision of the Examiner twice/finally rejecting applicant's claim(s). $540.00 (1401)/$0.00 (2401) $

☒ An appeal **BRIEF** is attached in the pending appeal of the above-identified application $540.00 (1402)/$0.00 (2402) $ 540.00

☐ Credit for fees paid in prior appeal without decision on merits -$ ( )

☐ A reply brief is attached. **(no fee)**

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this paper and attachment(s)
One Month Extension $130.00 (1251)/$0.00 (2251)
Two Month Extensions $490.00 (1252)/$0.00 (2252)
Three Month Extensions $1110.00 (1253/$0.00 (2253)
Four Month Extensions $1730.00 (1254/$0.00 (2254) $

☐ "Small entity" statement attached.

Less month extension previously paid on -$( )

TOTAL FEE ENCLOSED $ 540.00

☐ **CREDIT CARD PAYMENT FORM ATTACHED.**

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension. The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our **Account No. 14-1140.**

901 North Glebe Road, 11th Floor
Arlington, Virginia 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100
LSN/JR:lmj

NIXON & VANDERHYE P.C.
By Atty: Larry S. Nixon, Reg. No. 25,640

Signature: Larry S. Nixon

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Patent Application of

WALKER, et al.

Serial No. 10/501,771

Filed: July 20, 2004

For: VIDEO CODING

Atty. Ref.: 36-1832

TC/A.U.: 2621

Examiner: Chikoadili E. Anyikire

* *

October 22, 2008

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF UNDER 37 C.F.R. § 41.37(c)

Sir:

Applicant has appealed to the Board of Patent Appeals and Interferences (Notice of Appeal filed August 22, 2008) from the last decision of the Examiner (Final Office Action dated April 22, 2008). An appeal brief pursuant to 37 C.F.R. § 41.37(c) is now presented.

TABLE OF CONTENTS

(I) REAL PARTY IN INTEREST

The real party in interest is British Telecommunications public limited company, a British corporation of the United Kingdom.

(II) RELATED APPEALS AND INTERFERENCES

The appellant, the undersigned, and the assignee are not aware of any related appeals, interferences, or judicial proceedings (past or present), which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

(III) STATUS OF CLAIMS

Claims 1-10, 12, and 14 are pending and have been rejected.[1] Claims 11, 13, and 15 previously were cancelled. The rejection of claims 1-10, 12, and 14 is being appealed. No claims have been substantively allowed.[2]

[1] The Office Action Summary included with the Final Office Action, and the first two lines of the "Detailed Action" itself, are incorrect in stating that claims 1-15 are pending. Applicant cancelled claims 11, 13, and 15 in the January 16, 2008 Amendment under 37 C.F.R. § 1.111.

[2] Although the Final Office Action does not include a rejection of claim 10, Applicant assumes that it was the Examiner's intention to reject this claim based on reasoning similar to claim 1.

(IV) STATUS OF AMENDMENTS

No amendments have been filed since the date of the Final Rejection.

(V) SUMMARY OF CLAIMED SUBJECT MATTER

Each independent claim, each dependent claim argued separately, and each claim having means plus function language is summarized below including exemplary reference(s) to page and line number(s) of the specification.

A. Introduction

The invention of the claims relates to techniques for generating video for transmission to a user, particularly for use in a video surveillance system. A first representation of a first image is generated, and one or more further representations of the first image are then generated, with the further representation(s) being predicted from a previously generated representation of the first image. In response to a request for a subsequent image, a first representation of the subsequent image is predicted from a representation of the first image. Then, one or more further representations of the subsequent image are generated, with the further representations of the subsequent image being predicted from a previously generated representation of the subsequent image. Thus, the same source data for a first image is fed into the encoder, thereby producing a progressive still image at the decoder. When a different image is required, the encoder substitutes, as the input to the encoder, the source picture from the requested point in time. This source picture is encoded predictively from the original image.

B. Independent Method Claim 1

Independent method claim 1 relates to a method of transmitting images (e.g., p. 3, lines 19-20; p. 7, lines 14-18). A plurality of still images is captured (e.g., camera 70 in Fig. 2 that captures still images; input 101 in Fig. 3; p. 7, line 20, p. 10, lines 4-5). A first set of data is generated by encoding a first one of said still images (e.g., encoder 100 in Fig. 2; p. 3, line 21; p. 10, lines 13-20). One or more further sets of data by is/are generated predictively encoding the first image, with the predictive encoding being performed with respect to a decoded version of the first image associated with a previously generated set of data (e.g., feedback loop in encoder 100 in Fig. 3; p. 3; lines 22-24; p. 12, lines 18-28). In response to a user request which selects a further one of said still images, a first set of data representing the further image is generated by predictively encoding the further image, with the predictive encoding being performed with respect to a decoded version of the first image associated with a previously generated set of data; and (e.g., feedback loop in encoder 100 in Fig. 3; p. 3, lines 25-29; p. 9, line 18-23). One or more further sets of data representing the further image is/are generated by predictively encoding the further image, wherein the predictive encoding is performed with respect to a decoded version of the further image associated with a previously generated set of data (e.g., feedback loop in encoder 100 in Fig. 3; p. 4, lines 1-4; p. 9, line 18-23).

C. Dependent Method Claim 4

Dependent method claim 4 adds further features to those recited above in claim 1. In particular, claim 4 requires that the still images are stored in a buffer for presentation for encoding on request of a user (e.g., picture buffer 71 in Fig. 6; p. 5, line 18; p. 9, lines 14-16).

D. Dependent Method Claim 5

Dependent method claim 5 adds further features to those recited above in claim 1. In particular, claim 5 requires that the request for the further image represents a pre-determined time in the video data before or after the first image (e.g., user interface in Fig. 7; p. 4, lines 23-25; p. 14, lines 22-24).

E. Independent Apparatus Claim 6

Independent claim 6 relates to a video encoding apparatus comprising a predictive encoder (e.g., encoder 100 in Fig. 3; p. 5, lines 1-2; p. 9, lines 6-12). A first set of data representing a first one of plural still images is encoded (e.g., encoder 100 in Fig. 2; p. 5, line 3; p. 5, line 3; p. 10, lines 13-20). One or more further sets of data representing the first one of said still images is/are encoded by predictively encoding the first image, with the predictive encoding being performed with respect to a decoded version of the first image associated with a previously generated set of data (e.g., feedback loop in encoder 100 in Fig. 3; p. 5; lines 4-7; p. 12, lines 18-28). In response to the apparatus receiving a user request which selects a further one of said still images, a first set of data representing

the further image is encoded by predictively encoding the further image, with the predictive encoding being performed with respect to a decoded version of the first image associated with a previously generated set of data; and (e.g., feedback loop in encoder 100 in Fig. 3; p. 3, lines 25-29; p. 9, line 18-23). One or more further sets of data representing the further image is/are encoded by predictively encoding the further image, with the predictive encoding being performed with respect to a decoded version of the further image associated with a previously generated set of data (e.g., feedback loop in encoder 100 in Fig. 3; p. 3; lines 22-24; p. 4, lines 1-4; p. 9, line 18-23; p. 12, lines 18-28).

F. Dependent System Claim 7

Dependent system claim 7 relates to a video surveillance system (e.g., system shown in Fig. 1; p. 5, lines 21-22; p. 7, line 14 to p. 8, line 19). A video capture device is provided for capturing a plurality of images (e.g., camera 70 in Fig. 2; p. 7, line 20, p. 10, lines 4-5). A video encoding apparatus according to claim 6 is provided for encoding video signals received from the video capture device (e.g., encoder 100 in Fig. 3; p. 5, lines 1-2; p. 9, lines 6-12; see also claim 6 above). A user terminal includes a video decoding device for decoding video signals received from the video encoding device and a user interface for a user to input commands to be sent to the video encoding device (e.g., user terminal 4 in Fig. 1 and user interface in Fig. 7; p. 5, lines 26-28; p. 8, lines 1-15; p. 16, lines 1-6).

G. Independent Method Claim 9

Independent claim 9 relates to a method of decoding video data representing plural still images (e.g., p. 6, lines 16-17; p. 13, lines 8-24). A first set of data representing a first one of said plural still images is received (e.g., data in 50 in Fig. 5; p. 6, line 18; p. 13, lines 27-28). The first set of data is decoded to generate a decoded version of a first still image (e.g., decoder 200 in Fig. 5; p. 6, line 19; p. 13, line 30 to p. 14, line 6). Further received sets of data representing the first still image are decoded with reference to a previously decoded version of the first still image (e.g., feedback loop in decoder 200 in Fig. 5; p. 6, lines 20-21; p. 14, lines 8-14). A user request which selects a further still image from the video data is sent to a transmitting encoder (e.g., p. 6, lines 22-23; p. 14, lines 16-18). A received set of data representing the requested further still image is decoded with reference to a previously decoded version of the first still image so as to generate a decoded version of the further still image; and (e.g., p. 6, lines 24-26; p. 14, line 20 to p. 15, line 14). Further received sets of data representing the further still image are decoded with reference to a previously decoded version of the further still image (e.g., feedback loop in decoder 200 in Fig. 5; p. 6, lines 27-28; p. 14, line 20 to p. 15, line 14).

(VI) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 4-10, 12, and 14 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Yavits et al. (U.S. Publication No. 2003/0048847).[3]

Claims 2-3 stand rejected under 35 U.S.C. § 103(a) as allegedly being "obvious" over Yavits in view of King (U.S. Patent No. 5,802,211).

[3] As noted in footnote 2, *supra*, Applicant assumes that it was the Examiner's intention to reject claim 10 based on "reasoning" similar to claim 1, even though the Final Office Action does not include a rejection of this claim. In any event, such is irrelevant since, as explained in greater detail below, claim 1 clearly and patentably defines over the prior art of record and since claim 10 depends from claim 1.

(VII) ARGUMENT

A. Claims 1, 4-10, 12, and 14 Each Are Not Anticipated By Yavits.

Claims 1, 4-10, 12, and 14 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Yavits et al. (U.S. Publication No. 2003/0048847). This rejection should be reversed for at least the following reasons.

Applicant notes by way of background that in known video surveillance systems, problems arise when data from surveillance cameras are transmitted over low bit-rate network connections. Data either can be sent directly in a video format (such as MPEG) that suffers from such low quality as to be useless to the viewer or, alternatively, as a series of still images (such as JPEG images) which, for low data rates, each take significant time to download. Such problems can be particularly inconvenient when the frame turns out to be visually irrelevant and the user is forced to request an alternative frame.

In Applicant's invention, still images are sent to the viewer, with each being progressively refined with time (as is the case with JPEG images). However, such processing is then combined with predictive encoding when a user requests an alternative frame. In predictive encoding, the subsequent frame is encoded by exploiting similarity with respect to the previously transmitted frame. In essence, this means that the newly transmitted image appears with almost immediately the same high quality as the previous progressively enhanced frame had reached.

Predictive encoding itself is already used within standard moving image video codes such as MPEG. However, in this context, it is only used to send a stream of constantly changing (e.g., 30 frames per second) frames of a moving picture, each encoded, for example, with respect to the previous frame. Such encoding occurs automatically without any user request for a next frame.

In contrast to these basic techniques, Applicant's claimed invention comes into play after an initial version of a single frame has been sent to a user -- that is, when the same frame is continuously fed as input into the encoder to improve the image progressively. Later, whenever a new still image is requested by the user, the new frame is input into the encoder (regardless of whether the new still image was recorded earlier or later in time), and the new frame is now encoded in relation to the previous progressively enhanced frame selected by the user.

Yavits does not disclose the same or even similar features to those specifically recited in clam 1, since its techniques are applied in a fundamentally different way to a fundamentally different type of data. Indeed, Yavits merely is another example of rapid (e.g., 30 Hz) automatic inter-frame coding of moving picture frames. Claim 1 previously was amended to refer to still pictures, rather than possibly to moving picture video data. In fact, claim 1 further recites capturing still pictures, thus further distinguishing the claimed invention from conventional digital moving picture technology. Of course, claim 1 also requires a user request to cause selection of a different frame for input to the encoder/decoder, which also is not disclosed by Yavits.

The Final Office Action alleges that Applicant's specification at page 11, line 28, "seems to describe a still image is an I-frame followed by P frames." Aside from the fact that it is in any event inappropriate to read limitations from the specification into the claims, this inference is clearly erroneous. A still image is a single frame. Applicant's specification at page 11, line 28, discusses six successive, single frames of video output from the encoder -- one every *n* seconds. Equating a successive plurality of individual frames with a single still image is clear error.

It might be the case that the Final Office Action is attempting to argue that because Applicant describes the output as being an IPPP sequence, the specifically claimed "still image" can somehow be equated with IPPP, which is the same coded format used by Yavits. This is incorrect. Applicant's claims require selection and coding of individual still pictures. Yavits only codes moving pictures. The fact that the coded output signal has a similar structure is irrelevant to how Applicant's specifically claimed methods, systems, etc., function, and what type of data they are made to function on.

Aside from the very fundamental difference between Applicant's claimed invention (which pertains to coding still pictures) and Yavits (which pertains to coding moving pictures), there are yet further noteworthy differences between the two. For example, as the Final Office Action apparently appreciates, Applicant's claims also require that certain method steps occur in response to a user request (e.g., that a user request selects a further one still image, etc.). In an attempt to find this teaching in Yavits, the Examiner relies upon paragraph 73, lines 7-9. However, this paragraph clearly does not teach that a user selects a single still image for further processing.

Instead, at best, it simply notes that the host interface 126 provides access to the compressed data and is used to provide device 100 with uncompressed digitized video and/or audio and/or user data.

There is nothing in Yavits that teaches, for example, "in response to a user request which selects a further one of said still images, generating a first set of data representing the further image by predictively encoding the further image, wherein the predictive encoding is performed with respect to a decoded version of the first image associated with a previously generated set of data," as required by claim 1. In short, Applicant's claimed invention fundamentally requires user selection of a still image, which is then encoded using encoding processes which are known *per se* for moving pictures -- but which were not previously taught as having applicability to a captured plurality of time-elapsed still images. Thus, Applicant respectfully submits that Yavits fails to anticipate the invention of claim 1 for at least this additional reason.

The remaining independent and dependent claims include features similar and/or complementary to those specifically recited in claim 1. That is, as described below, these claims are directed to the processing of a plurality of still images (i.e., so as to encode and/or decode a still image for viewing by a user).

In this regard, for example, claim 6 requires a predictive encoder to encode a first set of data representing a first one of plural still images and to thereafter encode one or more further sets of data representing the first one of that set of still images by predictively encoding the first image wherein the predictive encoding is performed with respect to a decoded version of the first image associated with a previously generated set

of data. Claim 6 also requires, in response to the apparatus receiving a user request which selects a further one of the still images, to encode a first set of data representing the further image by predictively encoding the further image, wherein predictive encoding is performed with respect to a decoded version of the first image associated with the previously generated set of data. Claim 6 further requires encoding one or more further sets of data representing the further image by predictively encoding the further image, wherein the predictive encoding is performed with respect to a decoded version of the further image associated with a previously generated set of data. These features are not taught by Yavits for at least the reasons noted above.

Claim 7 is directed to a video surveillance system which includes, *inter alia*, a video capture device for capturing plural images, as well as a video encoding apparatus of claim 6 for encoding the video signals received from the video capture device. Claim 7 also requires a user terminal including a video decoding device for decoding video signals received from the video encoding device and a user interface for a user to input commands to be sent to the video encoding device. Claim 9 is directed to a complementary method of decoding which again requires processing of plural still images.

Thus, Applicant respectfully submits that Yavits also fails to anticipate claims 6-7 and 9.

Dependent claims 4-5 and 8 include yet further features that are not disclosed in Yavits. For example, claim 4 requires that the still images be stored in a buffer for presentation for encoding at the request of a user. Claim 5 requires that the request for a

further image represents a predetermined time before or after the first image. Claim 8 further requires that buffered plural images be stored for presentation for encoding at the request of a user. None of these specifically claimed features are taught by Yavits. Thus, for at least these additional reasons, Yavits fails to anticipate claims 4-5 and 8.

Given the fundamental differences noted above, it is clear that Yavits does not anticipate claims 1, 4-10, 12, and 14. Thus, Applicant respectfully requests that this rejection be reversed.

B. Claims 2 and 3 Each Are Not "Obvious" Over Yavits in view of King.

Claims 2-3 stand rejected under 35 U.S.C. § 103(a) as allegedly being "obvious" over Yavits in view of King (U.S. Patent No. 5,802,211). This rejection should be reversed for at least the following reasons.

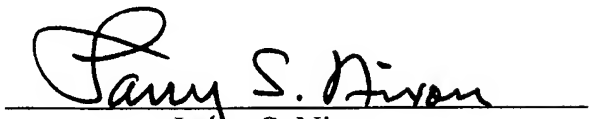
Numerous fundamental deficiencies with Yavits have already been noted above. King does not make up for those deficiencies. Indeed, King, like Yavits, is directed to dealing with rapid automatic encoding, transmitting, and decoding of motion picture frames -- and presenting the resultant motion pictures for view by the user. Such teachings are in complete contrast with Applicant's claimed invention for processing and presenting still image to a viewer -- and then responding to a user request before inputting a different frame to the encoder/decoder. As such, the alleged combination, even if appropriate (which Applicant does not admit), would not render obvious the inventions of claims 2-3. Thus, Applicant respectfully requests that this rejection be reversed.

CONCLUSION

In conclusion it is believed that the rejections of claims 1-10, 12, and 14 are erroneous and should be reversed.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 

Larry S. Nixon
Reg. No. 25,640

LSN:jr
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100

(VIII) CLAIMS APPENDIX

1. A method of transmitting images, the method comprising:

capturing a plurality of still images;

generating a first set of data by encoding a first one of said still images;

generating one or more further sets of data by predictively encoding the first image, wherein the predictive encoding is performed with respect to a decoded version of the first image associated with a previously generated set of data;

in response to a user request which selects a further one of said still images, generating a first set of data representing the further image by predictively encoding the further image, wherein the predictive encoding is performed with respect to a decoded version of the first image associated with a previously generated set of data; and

generating one or more further sets of data representing the further image by predictively encoding the further image, wherein the predictive encoding is performed with respect to a decoded version of the further image associated with a previously generated set of data.

2. A method according to claim 1, wherein the first set of data representing the further image is generated by predictive encoding with respect to the decoded version of the first image associated with the immediately preceding generated set of data representing the first image.

3. A method according to claim 1 wherein each further set of data representing a still image is generated by predictively encoding that image with respect to a decoded version of a still image associated with the immediately preceding generated set of data.

4. A method according to claim 1, wherein said still images are stored in a buffer for presentation for encoding on request of a user.

5. A method according to claim 1 wherein the request for the further image represents a pre-determined time in the video data before or after the first image.

6. Video encoding apparatus, comprising a predictive encoder arranged:

to encode a first set of data representing a first one of plural still images;

to encode one or more further sets of data representing the first one of said still images by predictively encoding the first image, wherein the predictive encoding is performed with respect to a decoded version of the first image associated with a previously generated set of data;

in response to the apparatus receiving a user request which selects a further one of said still images, to encode a first set of data representing the further image by predictively encoding the further image, wherein the predictive encoding is performed with respect to a decoded version of the first image associated with a previously generated set of data; and

to encode one or more further sets of data representing the further image by predictively encoding the further image, wherein the predictive encoding is performed with respect to a decoded version of the further image associated with a previously generated set of data.

7. A video surveillance system comprising:

a video capture device for capturing a plurality of images;

a video encoding apparatus according to claim 6 for encoding video signals received from the video capture device;

a user terminal including a video decoding device for decoding video signals received from the video encoding device and a user interface for a user to input commands to be sent to the video encoding device.

8. A video surveillance system according to claim 7 further including a buffer for storing said plurality of images for presentation for encoding on request of a user.

9. A method of decoding video data representing plural still images, said method comprising:

receiving a first set of data representing a first one of said plural still images;

decoding the first set of data to generate a decoded version of a first still image;

decoding further received sets of data representing the first still image with reference to a previously decoded version of the first still image;

sending to a transmitting encoder a user request which selects a further still image from the video data;

decoding a received set of data representing the requested further still image with reference to a previously decoded version of the first still image so as to generate a decoded version of the further still image; and

decoding further received sets of data representing the further still image with reference to a previously decoded version of the further still image.

10. A computer readable medium encoded with computer executable instructions for causing one or more computers to perform the method according to claim 1 when the instructions are executed by the computer or computers.

11. Cancelled.

12. A computer readable medium encoded with computer executable instructions for causing one or more computers to operate as the apparatus according to claim 6.

13. Cancelled.

14. A computer readable medium encoded with computer executable instructions for causing one or more computers to operate as the system of claim 7.

15. Cancelled.

(IX) EVIDENCE APPENDIX

None.

(X) RELATED PROCEEDINGS APPENDIX

None.